UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,176	04/18/2007	Kiyotaka Nakano	14875-0163US1/C1-A0322P-U	8936

26161 7590 10/12/2011

FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
DO, PENSEE T	

ART UNIT	PAPER NUMBER
1641	

NOTIFICATION DATE	DELIVERY MODE
10/12/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,176	NAKANO ET AL.	
	Examiner	Art Unit	
	PENSEE DO	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *6-11 and 15-24* is/are pending in the application.

5a) Of the above claim(s) *6-11* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *15-24* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☒ Claim(s) *6-11 and 15-24* are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/20/2011; 9/13/2011; 9/01/2011; 8/24/2011; 7/27/2011; 5/6/2011; 4/28/2011*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Application 10582176, PG Pub. No. 20070281327, filed 04/18/2007 is a national stage entry of PCT/JP04/18499, International Filing Date: 12/10/2004 and claims foreign priority to 2003-415733 , filed 12/12/2003.

Information Disclosure Statement

IDS papers submitted on 9/20/2011; 9/13/2011; 9/01/2011; 8/24/2011; 7/27/2011; 5/06/2011; 4/28/2011 have been acknowledged and considered. It is also confirmed that the IDS on August 5, 2009 was considered in the last office action.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 28, 2011 has been entered.

Amendment Entry & Claims Status

The amendment filed on July 23, 2010 has been acknowledged and entered.

Claims 1-5, 12-14 are canceled.

Claims 6-11 are withdrawn.

Claims 15-24 are pending and being examined.

Withdrawn Rejection(s)

Rejection under USC 102(e) for claims 1-5, 12-14 in the previous office action is withdrawn herein.

Claimed Invention

15. A method of screening comprising:

(a) providing a plurality of whole antibodies that bind to a given antigen, wherein the plurality of whole antibodies comprises antibodies with weak or undetectable agonistic activity for the antigen;

(b) producing a minibody of each whole antibody;

(c) screening the minibodies for their ability to agonize the antigen; and

(d) selecting a minibody if it exhibits agonistic activity greater than that of its respective whole antibody.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 15-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 40-42, 55, 59 of copending Application No. 10/582,413. Although the conflicting claims are not identical, they are not patentably distinct from each other because copending application '413 claims the a method of screening for an agonist antibody comprising the steps of identifying an antibody that binds to a receptor; modifying the antibody; and determining the agonist activity of the modified antibody and selecting modified antibody with agonist activity.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15-17, 19-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. (US PG Pub. No. 2004/0242847 submitted by Applicants in IDS 4/23/2007).

For claim 15, Fukushima teaches a method of screening for an agonist antibody comprising the steps of: providing a plurality of whole antibodies that bind to a given antigen, wherein the plurality of whole antibodies comprise antibodies with weak or undetectable agonistic activity for the antigen; producing a minibody of each whole antibody; screening the minibodies for their ability to agonize the antigen; and selecting the minibody if it exhibits agonistic activity greater than that of its respective whole antibody. (see entire document; e.g. [231]; (see example 6); [0281]-[291]; [324]; [325]; [369]).

However, Fukushima fails to teach a plurality of different whole antibodies comprise antibodies with weak or undetectable agonistic activity for the antigen.

It would have been obvious to one of ordinary skill in the art to use a plurality of whole antibodies with more than one antibody having weak or undetectable agonistic activity since Fukushima teaches using three different whole antibodies wherein among those antibodies there is one antibody with weak or undetectable agonistic activity. When the prior arts teaches the method of making and using of a certain product, then it would have been obvious to one of ordinary skill in the art to make a plurality of such product through routine experimentation.

Regarding claim 16, Fukushima teaches the antibody is against protein expressed on cell membrane. (see [034]).

Regarding claim 17, Fukushima teaches the antigen is a receptor. (see [325]).

Regarding claim 18, Fukushima teaches the antigen is Leukemia inhibitory factor LIF receptors. (see [0035]).

Regarding claim 19, Fukushima teaches the antigen is a thrombopoietin (TPO). (see [0325]).

Regarding claim 20, Fukushima teaches the antigen is CD47 (see [0035]).

Regarding claim 21, Fukushima teaches the modified antibody is sc(Fv)2. (see [230]).

Regarding claim 22, Fukushima teaches the minibodies are diabodies. (see [0061]).

Regarding claim 23, Fukushima teaches the agonist activity is not determined before the antibody is modified. (see example 6; and [324] and [325]).

Regarding claim 24, Fukushima teaches that the plurality of whole antibodies is together in a mixture. (see [0325]).

Response to Arguments

Applicant's arguments filed April 28, 2011 have been fully considered but they are not persuasive.

Regarding the IDS, all the requests are fulfilled and please see attached considered IDS.

Regarding the ODP rejection, Applicants fail to address the rejection and thus, it is still maintained.

Regarding the 102 (e) rejection by Fukushima, Applicants argue that:

Fukushima fails to teach a plurality of whole antibodies that bind to a given antigen wherein the plurality of whole antibodies comprises antibodies with weak or undetectable agonistic activity for the antigen. Applicants submit that Fukushima describes experiments with three different whole antibodies, two of which (12B5 and 12E10) bind to MPL and another of which (MABL-2) binds to a different antigen (CD47). Of the three antibodies, the only plurality of whole antibodies that bind to a given antigen is the "plurality" made up of 12B5 and 12E10, both which bind MPL. Fukushima discloses that one of those two whole antibodies has weak or undetectable agonistic activity for MPL.

This is found persuasive and therefore the 102 (e) rejection is replaced with a 103(a) rejection.

Applicants further submit that Fukushima fails to teach claim 23, which requires that the agonistic activities of the whole antibodies are not assayed prior to step (b) of claim 15 which is the step of modifying the whole antibodies.

This is not found persuasive because:

Fukushima performs side-by-side assays on each whole antibody and its minibody forms [0324]; [0325]. Thus, the agonistic activity of the whole antibody is performed after the minibody is formed so that side-by-side assays are performed to compare the agonistic activities.

Applicants further argue that Fukushima fails to teach claim 24 which requires that the plurality of whole antibodies are in a mixture and pointed to examples 6,7, and 8

in Fukushima showing that the whole antibodies (MAL-2, 12B5, and 12E10) are handled separately and they are not in a mixture.

This is not found persuasive because:

Fukushima at [0325] teaches that the different antibodies are in a mixture.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pensee T. Do whose telephone number is 571-272-0819. The examiner can normally be reached on Monday-Friday, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on 571-272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pensee T. Do/

Examiner, Art Unit 1641

/Mark L. Shibuya/

Supervisory Patent Examiner, Art Unit 1641